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BULLETINS AND PAPERS

RELATING TO THE
INCANDESCENT GAS LIGHTING INDUSTRY

SHOW WINDOW ILLUMINATION

BY THE
REFLEX LIGHT

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SHOW WINDOW LIGHTED WITH REFLEX GAS LAMPS.
(PHOTOGRAPH TAKEN AT NIGHT)



SHOW WINDOW ILLUMINATION BY THE REFLEX LIGHT



ADVERTISING by means of an attractive and artistic window display is regarded by every up-to-date merchant as the most effective method of attracting the public. His show window, with its equipment and location, is a determining factor in his business development and growth, but these alone will not obtain for him the fullest return unless he gives careful attention to the two important questions of **decoration** and **illumination**.

Proper window illumination is more important than all other factors in producing full return for the money invested in this form of advertising. Location, furnishing, display, artistic decoration are all lost if the window is not properly and effectively illuminated.

Merchants and window dressers are coming to a more complete realization of the full importance of window illumination, and with the assistance of the Illuminating Engineer, who brings to bear a knowledge of the most recent development in the art of illumination, the most economical and efficient systems, the light best suited to the proper display of the goods, and an installation planned and put up with a view to meeting the most exacting requirements of reliability, distribution, convenience, etc., window illumination is undergoing a revolutionary improvement.

Show window installations may be classified under the following headings:

1. Open Window Lighting, in which the lamps are hung directly in the window.
2. Deck Lighting, in which the window exhibit is "boxed in" and lighted from above a transparent or translucent deck or ceiling.
3. Windows lighted from the outside of the building. This method is in such limited use I shall not touch upon it in this article.

The most notable developments in window illumination have been made by the use of the "Reflex" Inverted Light, and it is the purpose of this Bulletin to show some of the typical results obtained in various cities with a plan giving the essential details of each installation.

Not the least important in connection with window lighting installations is the method by which lamps are lighted and extinguished, and illustrations have been chosen which are typical of the most successful methods now in use.



FIGURE No. 1.
NIGHT VIEW.—FIFTEEN MINUTE EXPOSURE.

The above reproduction (Figure 1) of the show window in W. H. Embick & Sons, Sixteenth and Chestnut Streets, Philadelphia, serves as a typical example of the open window system of illumination, and gives a comprehensive idea of the results to be obtained by the "Reflex" lights when properly installed.

The window has a very high ceiling, and permits of the installation of the lights far above the normal range of vision. The piping is obscured by the paneled glass effect in the upper portion of the window, shown more clearly in the plan (Figure 2) on the opposite page.

These lights are equipped with an efficient reflector, and are so placed as to give a uniform distribution of the light over the entire show space of the window, based upon a calculation of the candle-foot illumination taken from the candle-power curve of the reflector. The illumination in the Embick window is, therefore, free from the light and dark spots, so common in many show window installations.

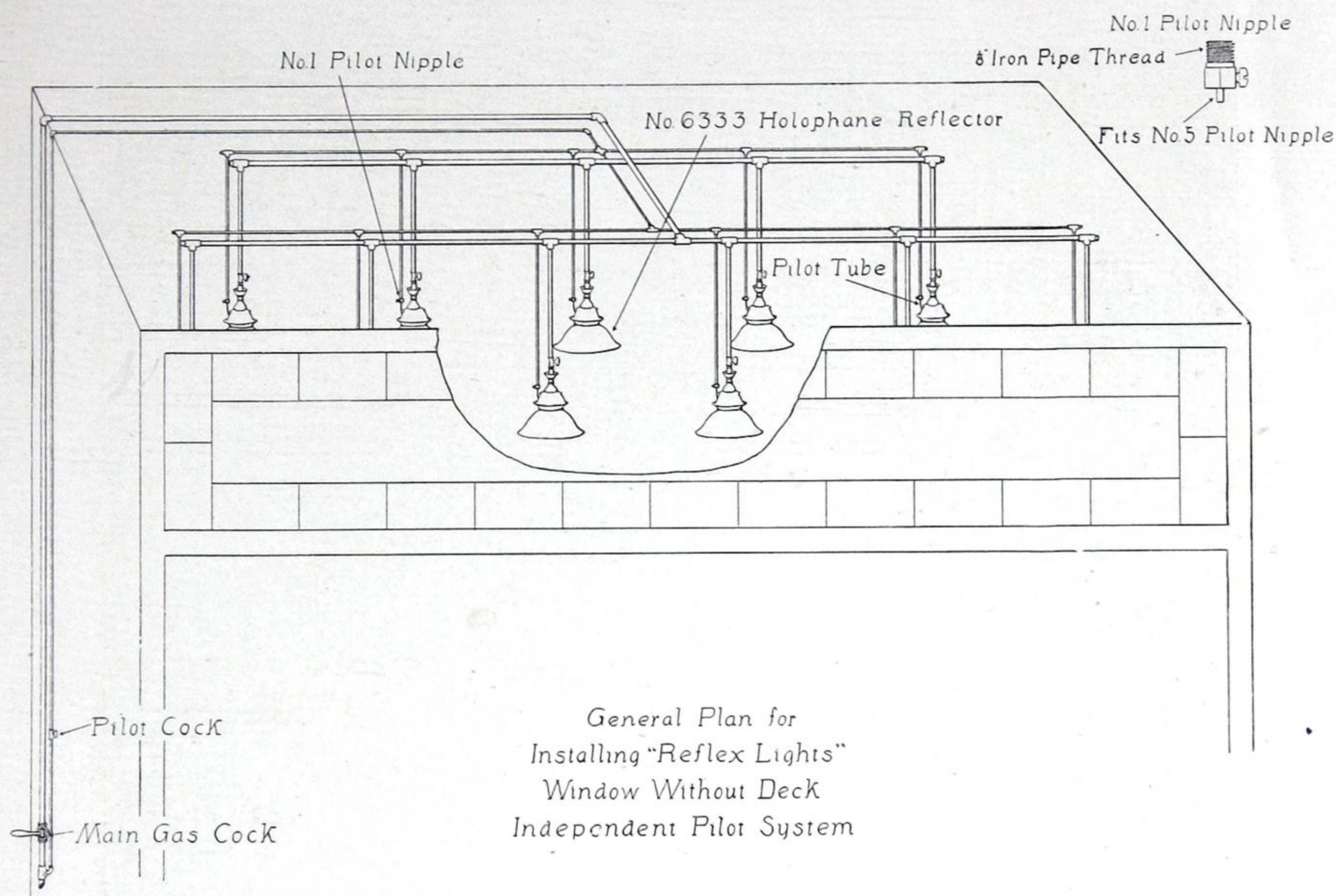


FIGURE No. 2.
PLAN OF W. H. EMBICK & SONS' WINDOW.

In view of the fact that the goods exhibited are dark, and that the wood work in the window is finished in Flemish oak, it must be admitted that the results obtained are remarkable.

This installation, which is one of the most prominent on Chestnut Street, is justly attracting much attention from the merchant who has window displays presenting difficult problems in illumination.

The gas supply for these lights is brought up through the floor at the side of the window, and is branched for the main gas supply for the burners and an independent supply for the pilot system.

The main gas cock is in an accessible position, as is also the gas cock for the pilot lights. A three-quarter-inch run is made for the main supply to the points of distribution over the burners, and a one-eighth-inch run is made for the pilot lights paralleling the main supply, as shown in the cut.

Drops for each lamp are provided with a gas cock, and the drops for the pilots are provided with a pilot nipple (No. 1), permitting of an easy adjustment of the pilot flames.

This installation is particularly adapted to the requirements of simplicity and to windows having a high ceiling.

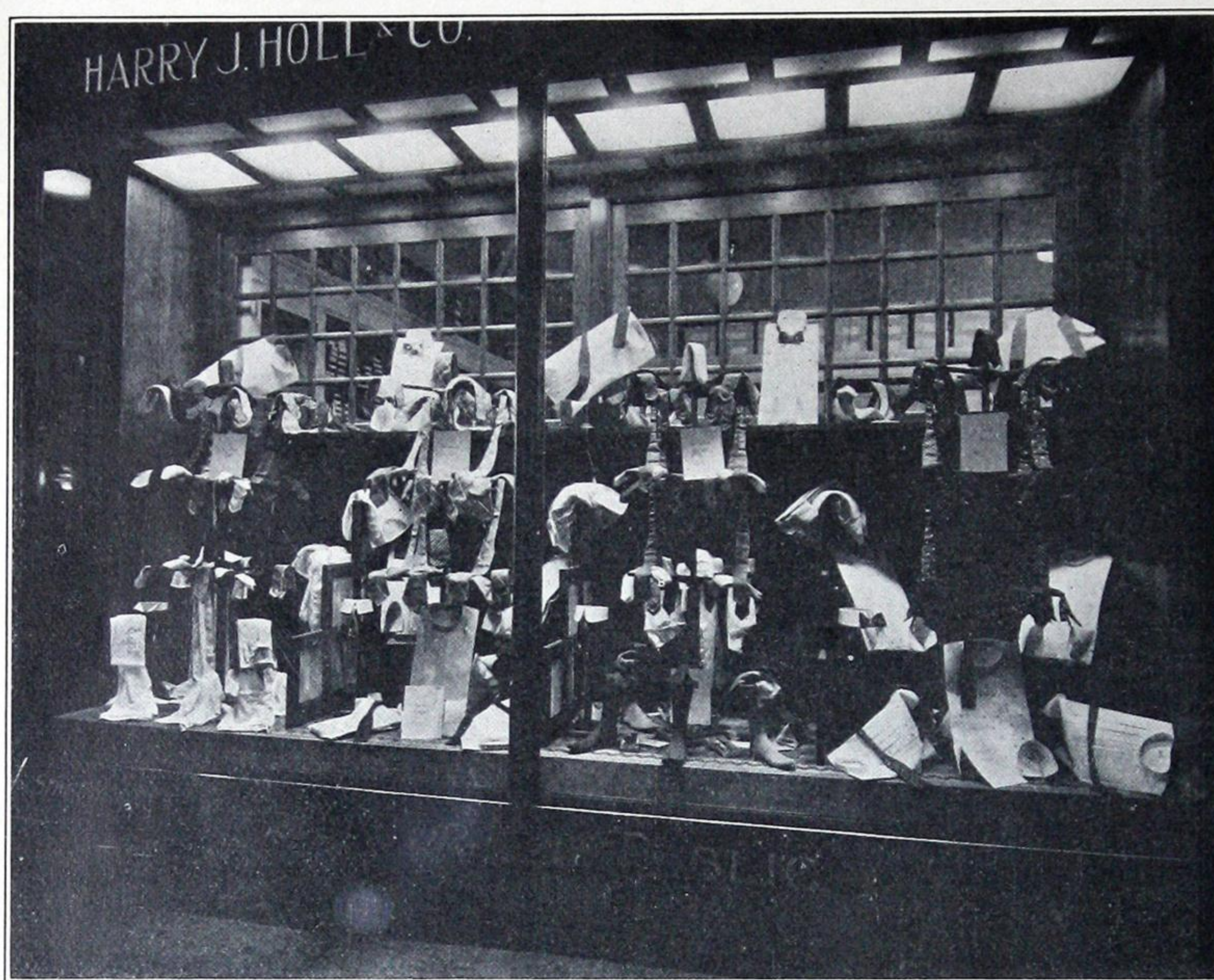


FIGURE No. 3.
NIGHT VIEW.—TWELVE MINUTE EXPOSURE.

DECK WINDOW. It is desirable in the display of certain classes of goods to have a sealed window, in order to protect the articles on display from dust. The installation made at the Men's Furnishing Store of Harry J. Holl & Co., 102 South Eleventh Street, Philadelphia (Figure 3), is a typical example of the method of applying the "Reflex" lighting system to an enclosed or deck window.

The panels in the deck are provided with a transparent or translucent glass. The practice in this case is to use ground glass, with the ground side down, and the lights are placed immediately above the centre of the panel. In the installation in question, a very uniform lighting effect is produced. The lights are entirely concealed, and are so placed as to be accessible from the inside of the store, without in any way disturbing the window exhibit.

The diffusion of the light through the ground glass panels gives a very pleasing effect, and a little care in laying out the position and arranging for a proper distribution of the lamps, so as to light up the front of the window, has resulted in producing an exceedingly attractive display.

In this installation a feature is also incorporated for turning out the lights

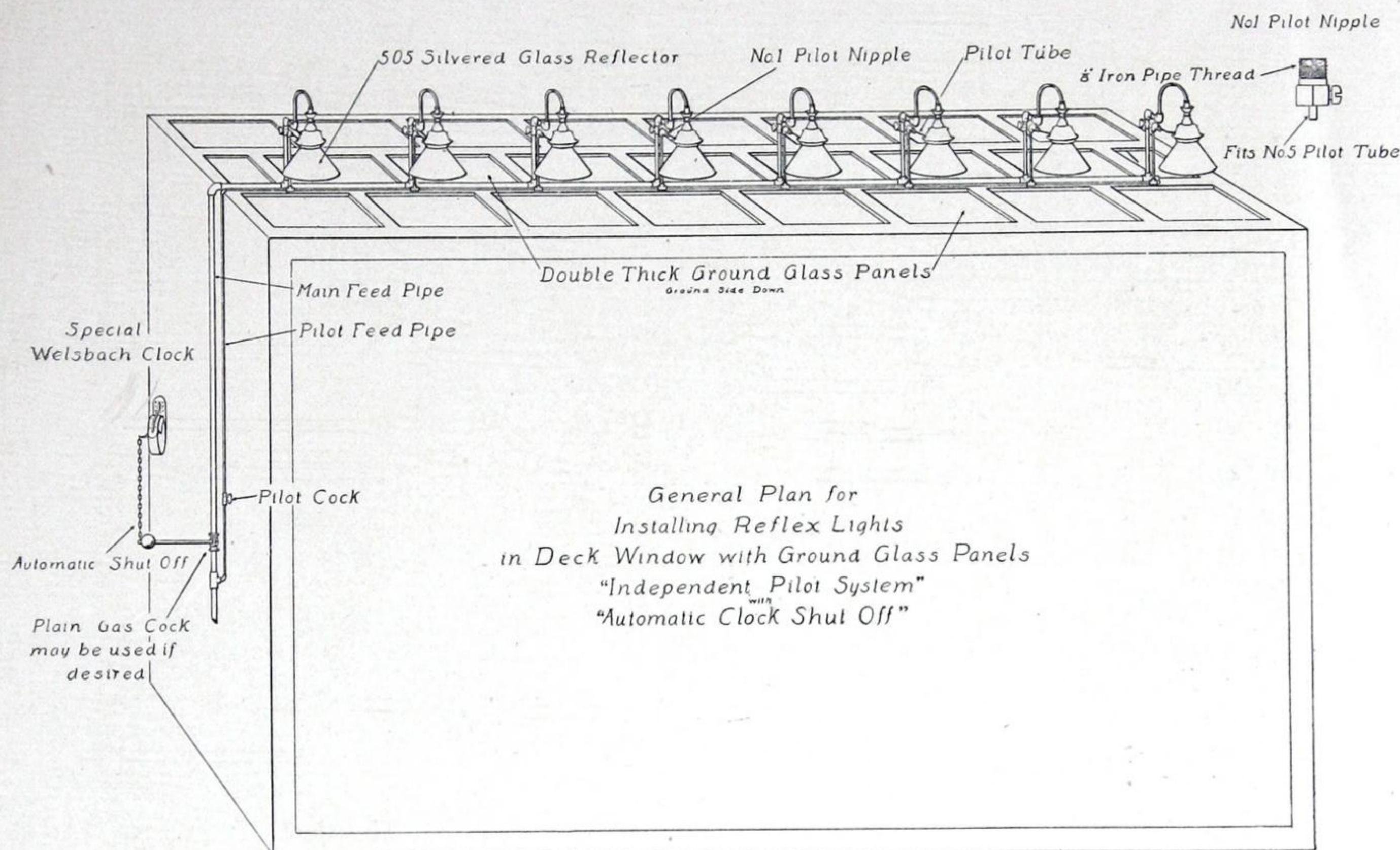


FIGURE No. 4.
PLAN OF H. J. HOLL & CO'S WINDOW

at a predetermined time, thereby avoiding the attention of the watchman and eliminating the possibility of neglect. This feature is receiving quite an extensive application in medium-sized and small installations, where a watchman is not employed.

Where the boxed window is built with wooden panels, and is lighted with electric bulbs placed inside, it is our practice to remove these wooden panels and replace them with ground glass, as was the case in the Holl installation. If the deck is put in especially for the installation of inverted lights, attention should be given to the size and position of the panels, based upon the number of lights necessary to produce the required number of foot-candles on the display. The position of the lights and the panels would also be determined in this calculation.

The gas supply pipe is brought up through the floor (Figure 4) and branched to provide for a one-eighth-inch independent pilot system. The main supply pipe is fitted with a ball-weighted cock which is attached to a special clock so arranged as to drop the ball at a predetermined time, and thereby shut off the gas.

Both the main supply and the pilot lines are run across the top of the deck, with parallel outlets, as shown in the plan. Each burner is provided with an independent shutoff cock for the gas supply and with pilot nipples (No. 1) for the regulation of the pilot lights.

SPARK LIGHTING FOR REFLEX LAMPS.

An alternative method of lighting "Reflex" lamps, and especially applicable to installations of several lights, as in a show window, has been developed in the form of an Electric Jump Spark Lighter.

The ignition is accomplished by equipping each burner (Figure 5) with a "Reflex" Sparker, designed and placed in the burner in such a position as to insure positive and instant ignition of the gas. This system depends for its operation upon the principle now so successfully utilized for sparking the gas mixture in automobiles and gas engines. The spark comes from the secondary terminals of a small induction coil. The primary current is supplied by standard dry cells. A set of these cells will last about one year.

INSTALLATION OF SPARK LIGHTING DEVICE.

PRIMARY CIRCUIT. Use four dry batteries of standard makes, testing not less than 16 amperes each, connected in series (zinc of one to the carbon of another). Run the wire from the zinc side of this nest of batteries to the post of the induction coil, marked "A." (Figure 7.) Connect the carbon side of the nest of batteries to one terminal of push button, and from the other terminal to the post marked "B," on the induction coil. This completes the primary circuit. The wire used in this circuit should be well insulated, and not less than No. 18 B. & S.

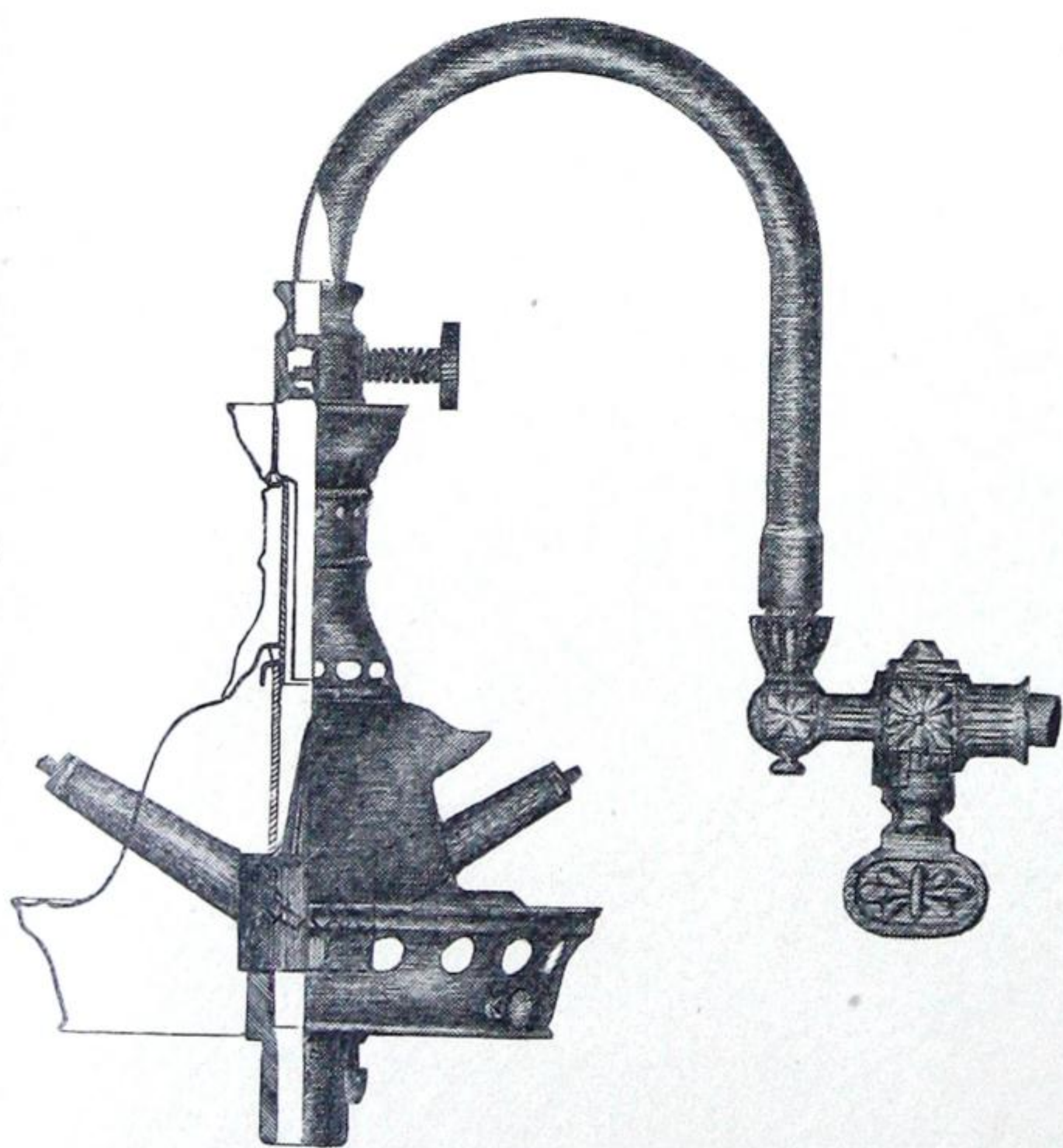


FIGURE No. 5.
REFLEX LAMP WITH SPARKER.

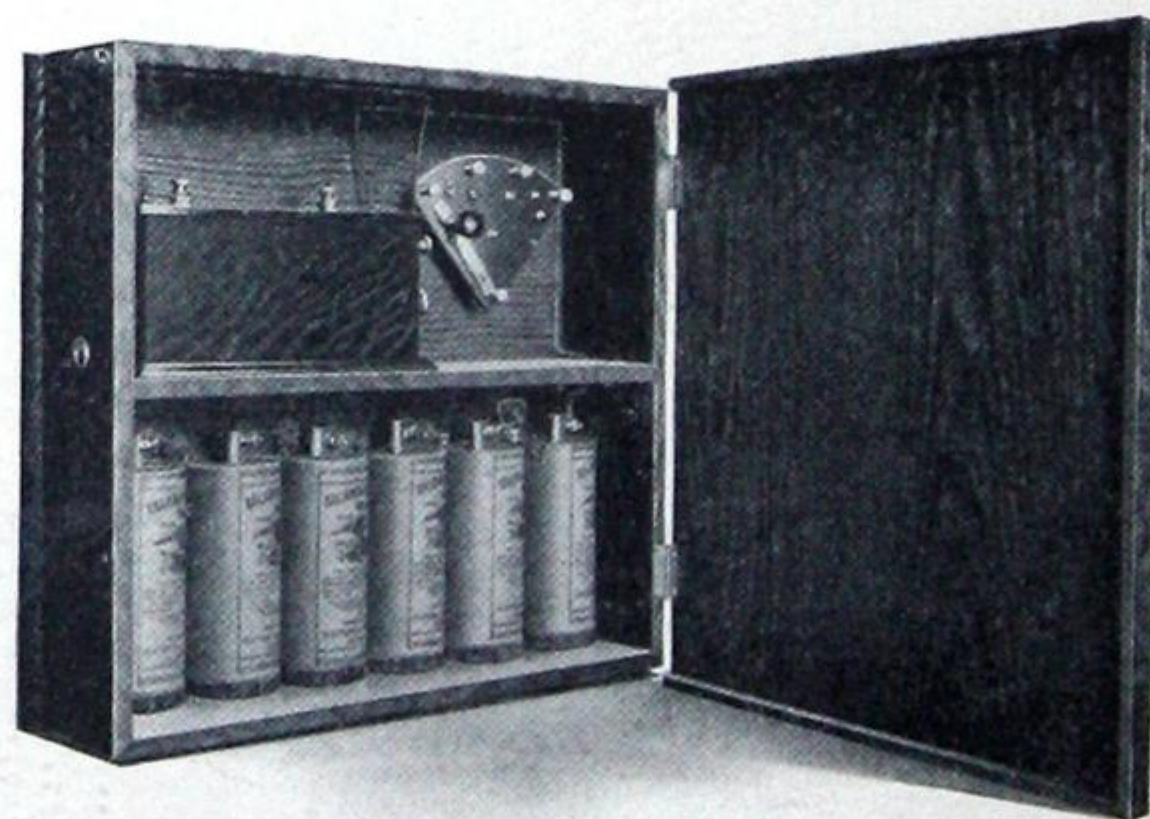


FIGURE No. 6.
CABINET FOR JUMP SPARK LIGHTING.

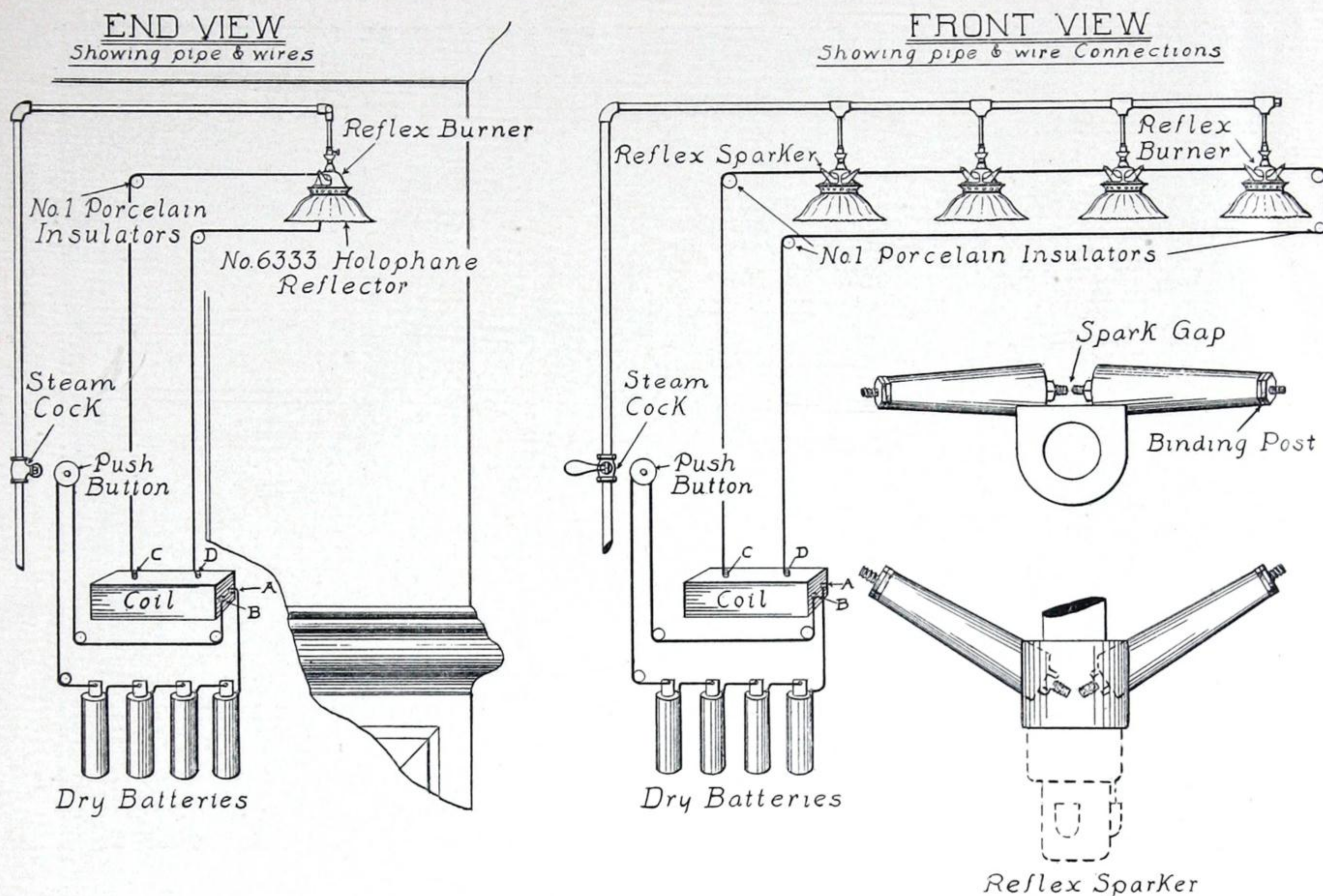


FIGURE No. 7.
GENERAL PLAN FOR INSTALLING LAMPS WITH JUMP SPARK SYSTEM OF LIGHTING.

SECONDARY CIRCUIT. Connect post "C" on the induction coil to the spark plug on the first lamp in the series, and post "D" on the induction coil to the spark plug on the last lamp in the series. The spark plugs on the lamps should then be connected together in series, always allowing a little slack in the wire, so as to avoid any strain on the spark plugs.

The wire used in this circuit should be No. 18 B. & S. gauge, except where the lamps are exposed to view, when No. 30 bare copper wire should be used.

The induction coil should be standard "Splitdorf," one-half-inch spark.

The wire in the secondary circuit must be separated from each other and away from any metal parts by at least one inch. Where it is necessary to run wires through ceilings or partitions, use glass tubes as insulators.

THE SUCCESSFUL WORKING OF THIS APPARATUS DEPENDS UPON THE PROPER INSULATION OF THE SECONDARY CIRCUIT.

The sparking points in the spark plugs should be adjusted to a distance between one thirty-second and one-sixteenth inch.



FIGURE No. 8.
NIGHT VIEW.—TWELVE MINUTE EXPOSURE.

A cabinet (Figure 6) may be constructed to contain all the necessary parts, including batteries, induction coil, push button and (if intended to be used on more than one series) a switch, all properly wired and tested, ready for placing in position and connecting with the spark plug terminals of the lamps.

The cabinets may be constructed and wired by any skilled electrician, or can be furnished from the Welsbach Factory in any finish ordered, ready for connecting up.

Loughran's Tobacco Store, 1347 Pennsylvania Avenue, Washington (Figure 8), is typical of a very well-developed plan of medium-sized store illumination.

The window, which is very deep from front to back, and is of the open type, is lighted by a row of "Reflex" lamps placed around the top sash. These lamps are equipped with green-plated angle shades (No. 445), which give a

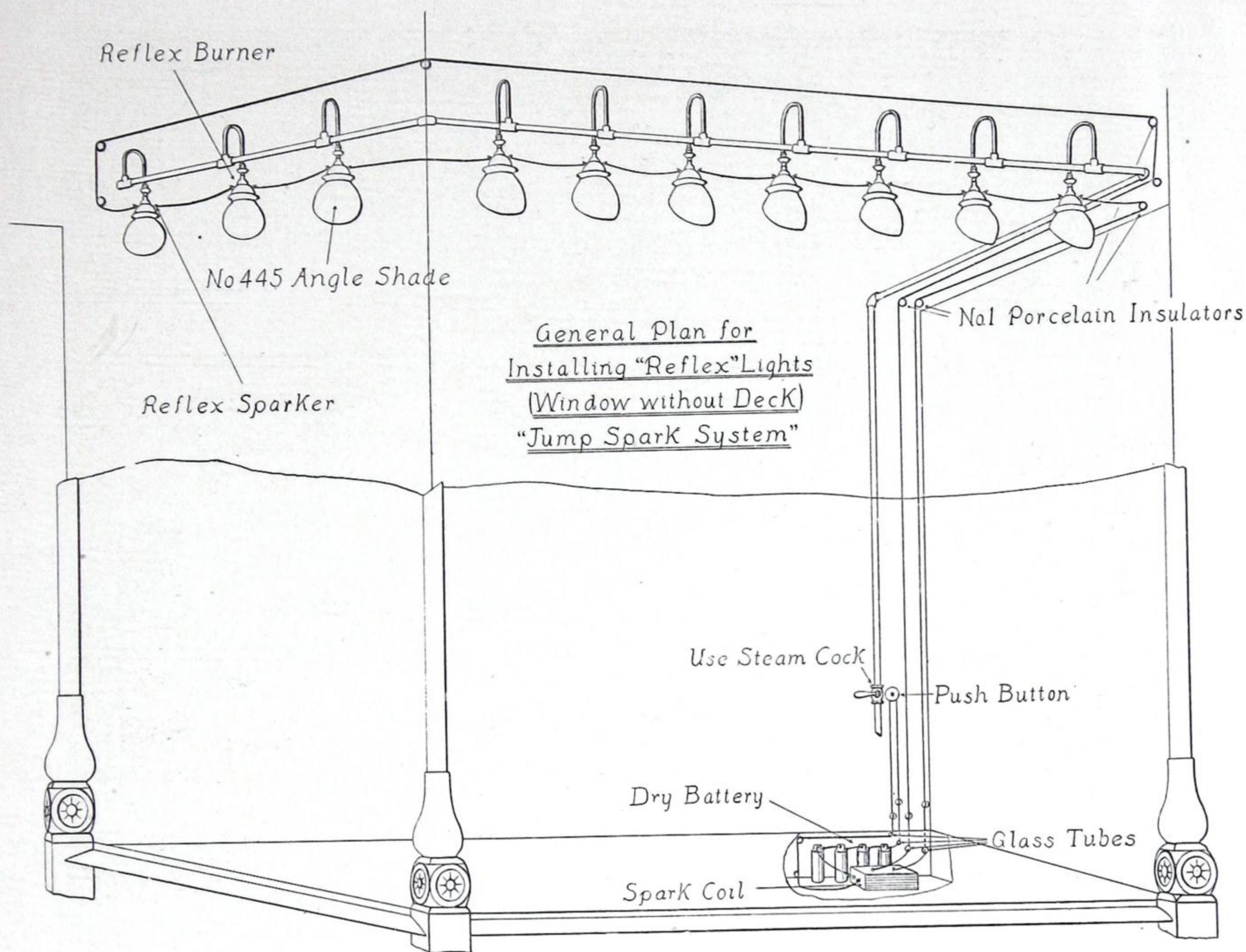


FIGURE No. 9.
PLAN OF LOUGHRAN'S WINDOW

very uniform and well distributed illumination over the entire window display, and also serve to light up the counters and cases immediately in the rear of the window. The illumination is sufficiently strong and so distributed as to bring out in full detail the transparent sign on the window. The lamps are lighted by the Jump Spark System, previously described.

The interior of the store is lighted by "Reflex" lights hung on standard four-light inverted chandeliers. The lamps are equipped with sandblast balls (No. 442). The general effect produced by this combination of interior and window lighting is very pleasing, and the store is one of the most attractive on Pennsylvania Avenue.

This installation is typical of a large number of medium-sized installations which may be seen in any of the progressive gas lighting districts of the United States.

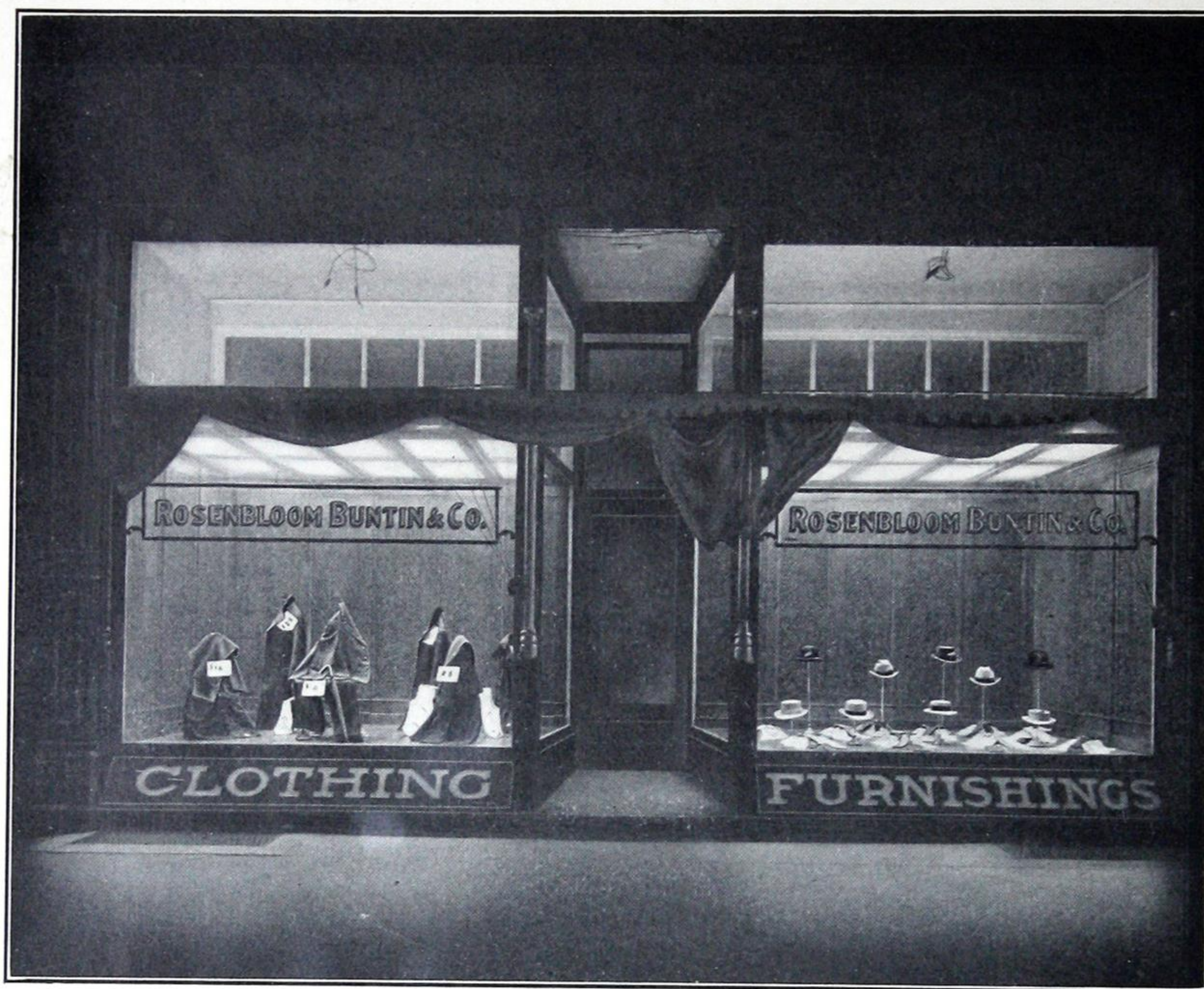


FIGURE No. 10.
NIGHT VIEW.—TWELVE MINUTE EXPOSURE.

The show window of Rosenbloom, Buntin & Co., of Richmond, Ind. (Figure 10), is a typical illustration of the application of the "Reflex" lamp to deck window illumination, where the lamps are lighted by the Electric Jump Spark System.

In this window, after the number and position of the lamps was determined by calculations based on the required foot-candle illumination for the floor of the window, the deck was laid out in panels to correspond exactly to the number of lights, and in such a way that each light would be directly over the centre of the panel. This results in a more symmetrical appearance, and also in a uniform illumination of each panel.

The wood work in the window is finished in dark oak, and the goods displayed stand out in bold contrast in the concentrated illumination. The results are very striking, and installations of this character, with the proper window equipment, meet the most exacting requirements.

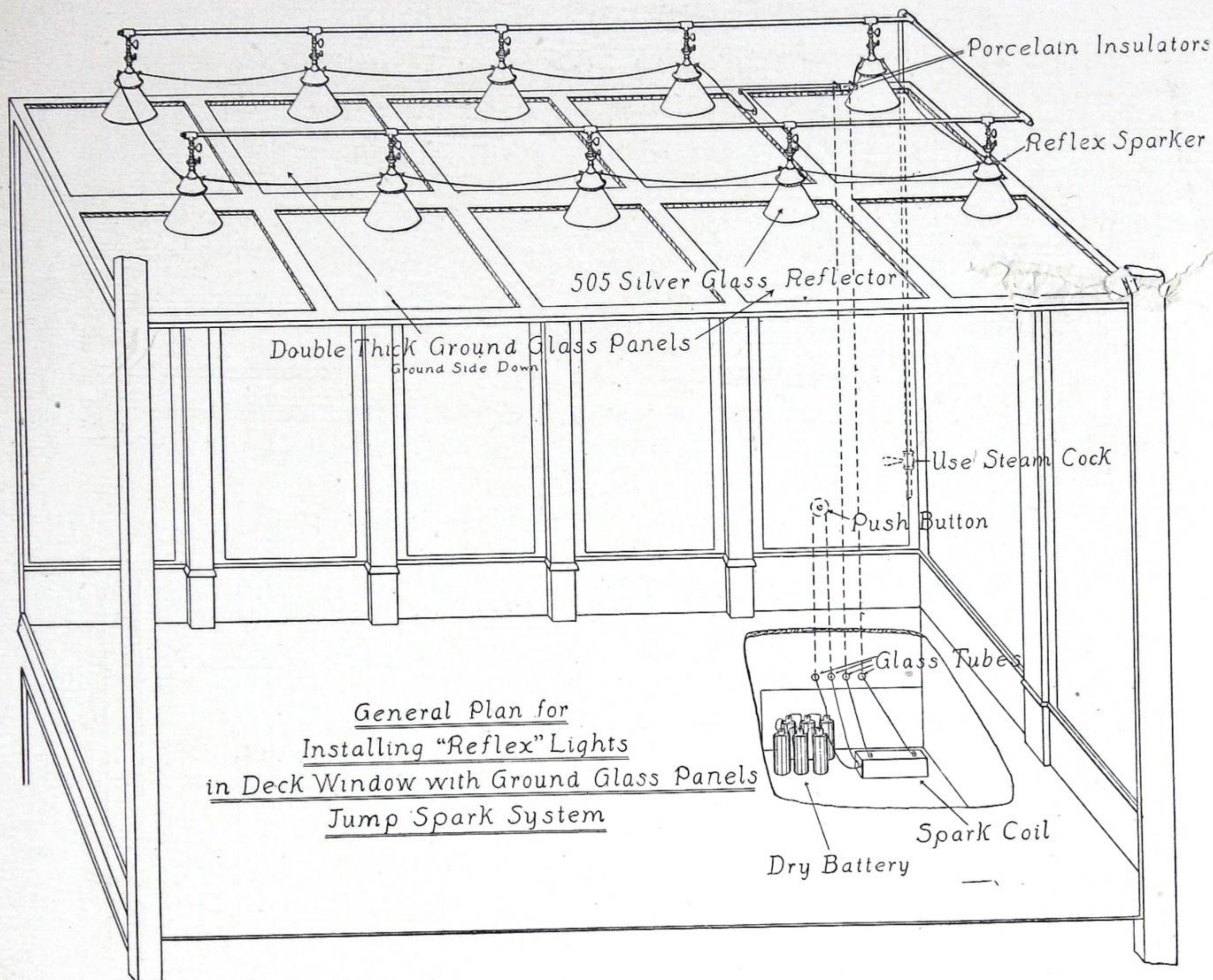


FIGURE No. 11.
PLAN OF ROSENBLOOM, BUNTIN & CO'S WINDOW

The plan (Figure 11) gives the details of construction for the right-hand window shown in Figure 10. The piping is brought up at the rear of the window, with the gas cock placed in an accessible position. The lamps are hung at a sufficient height over the panels to enable the fitter to trim them and clean the glassware, and also to permit the deck to be dusted.

The lamps are equipped with silvered glass cone reflectors (No. 505), which produce a strong downward distribution of the light. This, combined with the diffusive action of the ground glass panels, gives a combination which results in a uniform illumination over the floor of the window, without concentrated spots of light.

The batteries and induction coil are placed under the floor of the window, at the rear, so as to be accessible, and the push button is installed in the immediate neighborhood of the gas cock, so that for lighting it is only necessary to turn on the gas and push the button.

SMALL STORE LIGHTING.

A comparatively undeveloped field for the application of "Reflex" window lighting may be found in every town in the small stores and shops. None of these installations is of sufficient size to justify putting in either the independent pilot system or the Electric Jump Spark System, previously described. Conditions of this kind are met by such installations as shown in Figures 12 and 13, the larger size windows being equipped with two- and three-light straight arm fixtures and lamps with the individual pilot bypass. The fixtures should also be provided with a main gas cock, so that all lights and bypasses may be shut off if necessary.

In the smaller store windows it is a very common practice to install a single light, either by dropping down with a brass tube or a special fixture designed for that purpose. (Figure 13.)

The glassware equipment for these installations is important, and should

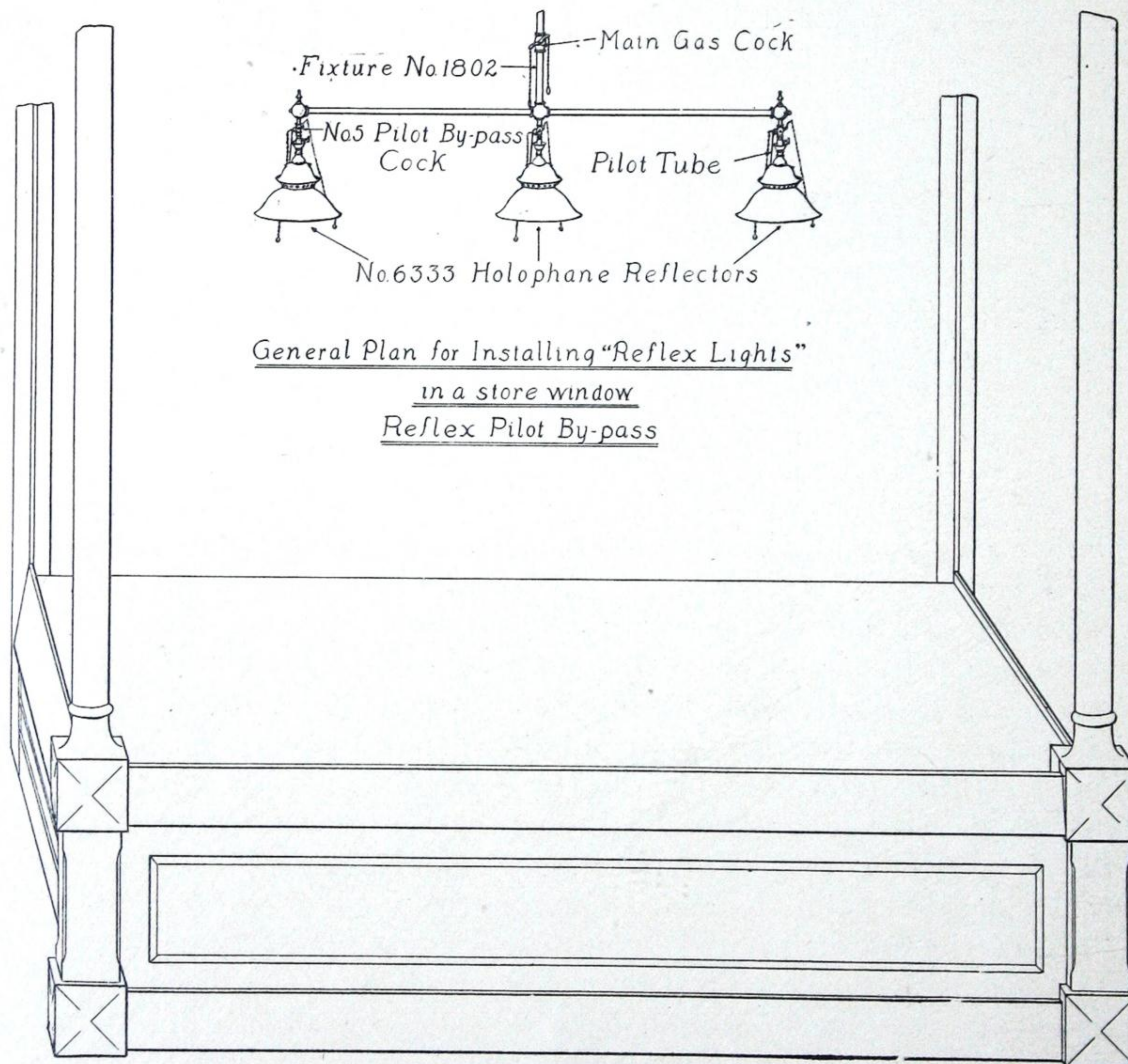


FIGURE No. 12.

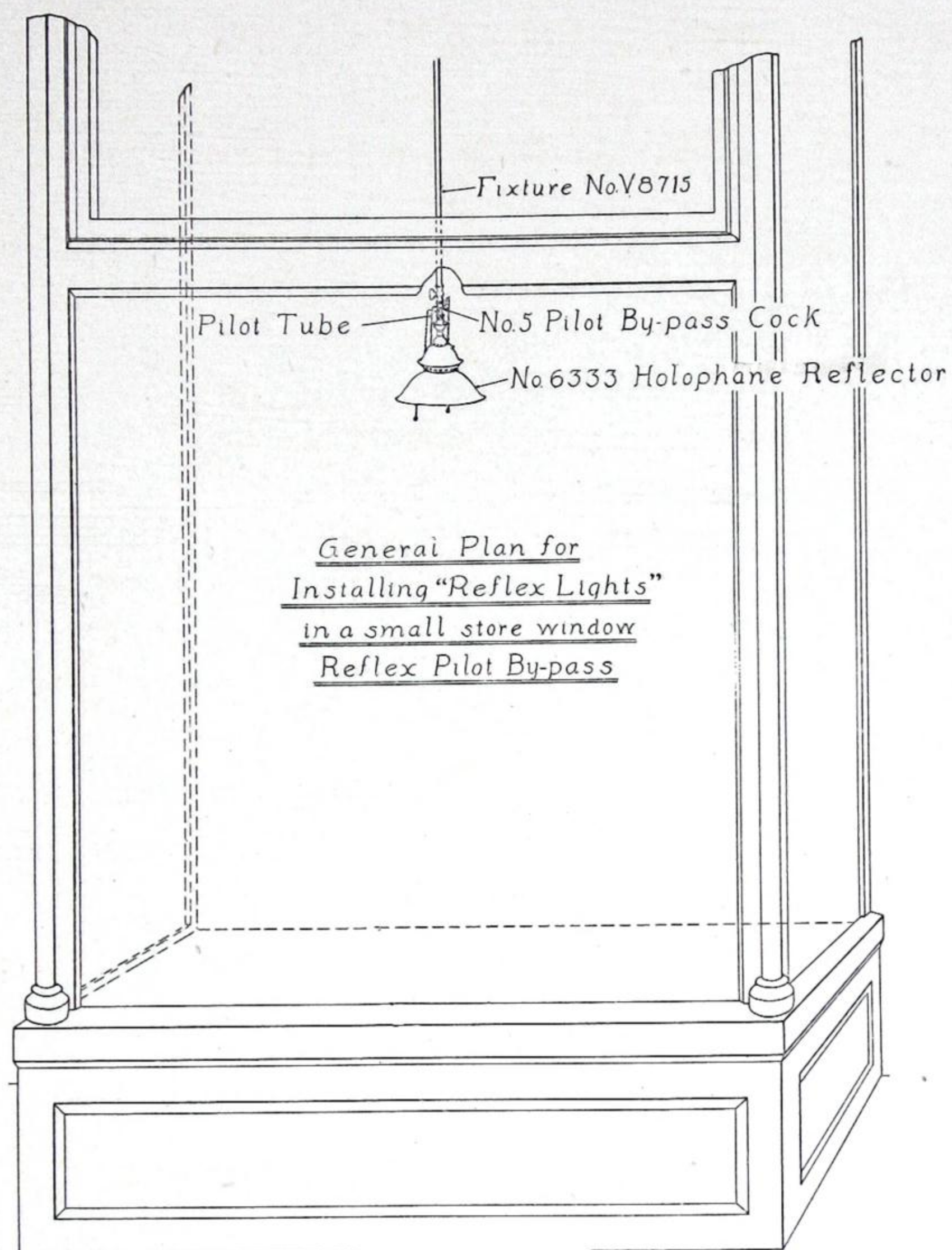


FIGURE No. 13.

be selected with a view to producing a uniform distribution over the floor of the window. It is generally conceded to be the best practice to use the Holophane reflector (No. 6,333), which has been especially designed for this class of work. The candle-power curve of this reflector shows an even concentration of light over considerable area when hung about five feet from the floor.

Many small shop windows are provided with shades, and the window illumination is made very effective by pulling the shades down to the point where they conceal the source of illumination from the normal range of vision.

The field of window lighting in the smaller store must be acknowledged to be practically undeveloped. The equipments here suggested offer an exceedingly simple and effective means of meeting the requirements of the small merchant.

The factor of economy, which is the most important in this field, is met by the "Reflex" lamp, at the same time offering lighting results equal to those of the best and largest city installations. The development of this field is a



HOLOPHANE REFLECTOR FOR REFLEX LAMPS.

matter of great importance to every one interested in the extension of gas illumination.

The foregoing views will serve to illustrate the widespread growth and application of the inverted gas lamp for window lighting. The flexibility of the system permits of its application not only to large city contracts, but to the small shop in every gas consuming community in the country. Existing installations of various types serve as working models which may be applied to almost every field of store window illumination.

When it is considered that these wonderful transformations in window lighting have been brought about by the introduction of a system which has no competition from the standpoint of economy and cost of operation, it will be conceded that a new and exceedingly fertile field is offered in the application of "Reflex" combinations to all classes of store window illumination.

